

## Objectives

- Psychosocial distress is common among cancer patients and may affect health outcomes.
- This study examined NCCN Distress Thermometer (DT) scores, and the association between patient reported distress and patient outcomes in a large US community oncology setting.

## Methods

- This retrospective cohort study included adults with metastatic breast (mBC), colorectal (mCRC), or non-small cell lung cancer (mNSCLC) who completed the DT questionnaire in the iKnowMed electronic health record between January 2023 and December 2025.
- Initial (index) DT scores were categorized as mild (1-3), moderate (4-6), and severe (7-10), while problem-list items were grouped by domain.
- Prognostic value for overall survival (OS) was assessed using multivariable time-dependent Cox models adjusted for demographic and clinical factors.

**Table 1. Baseline Distress and Distress Change by Cohort**

Baseline Distress Thermometer (first DT)			
DT group	Breast Cancer	Colorectal Cancer	Non Small Cell Lung Cancer (NSCLC)
1-3	1014 (51.03%)	607 (51.05%)	791 (47.85%)
4-6	602 (30.30%)	366 (30.78%)	523 (31.64%)
7-10	371 (18.67%)	216 (18.17%)	339 (20.51%)

Distress Change Category (Last - First DT)			
DT change	Breast Cancer	Colorectal Cancer	Non Small Cell Lung Cancer (NSCLC)
Improved	339 (17.06%)	165 (13.88%)	244 (14.76%)
No change	185 (9.31%)	97 (8.16%)	115 (6.96%)
Worsened	306 (15.40%)	157 (13.20%)	199 (12.04%)
Unknown	1157 (58.23%)	770 (64.76%)	1095 (66.24%)

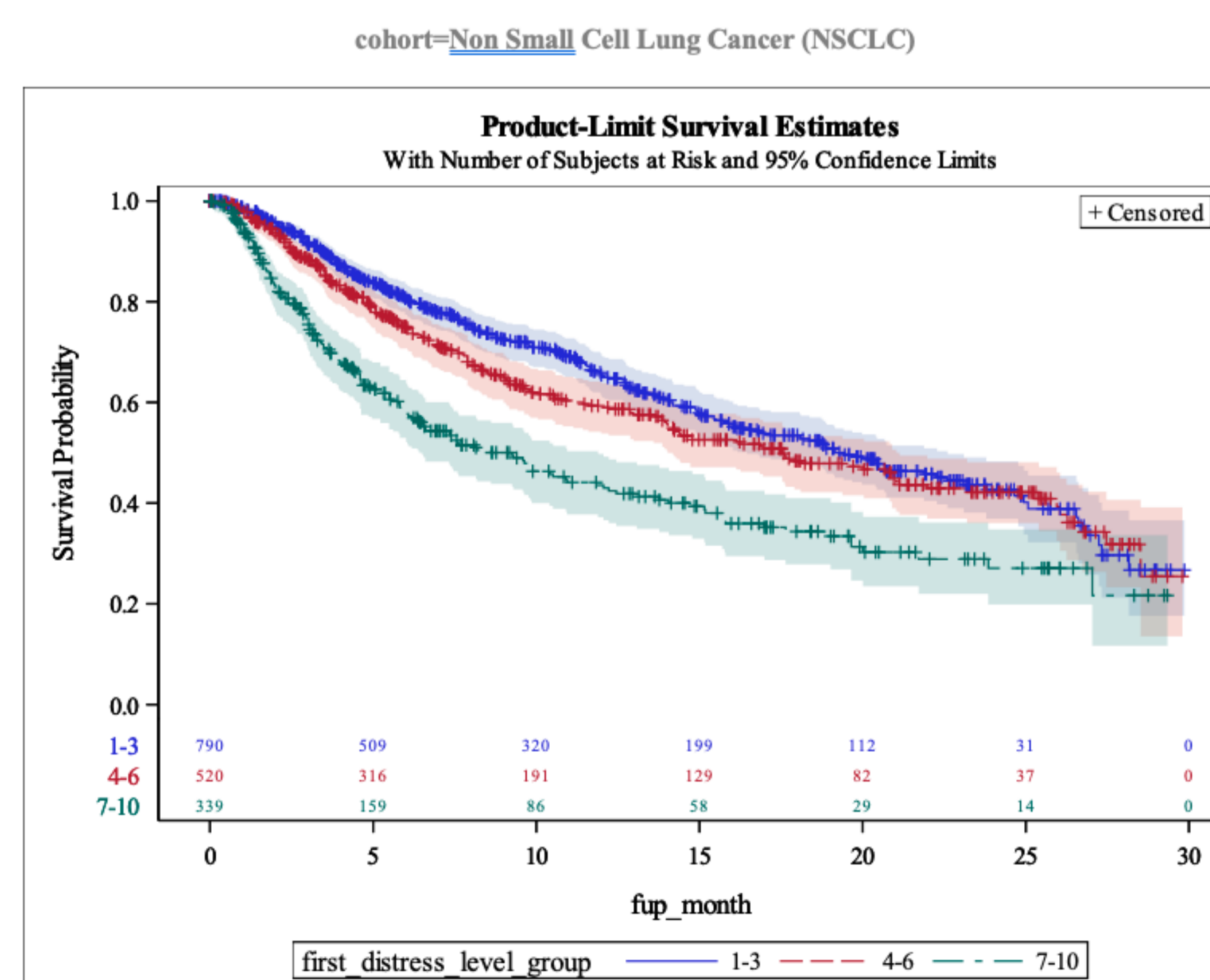
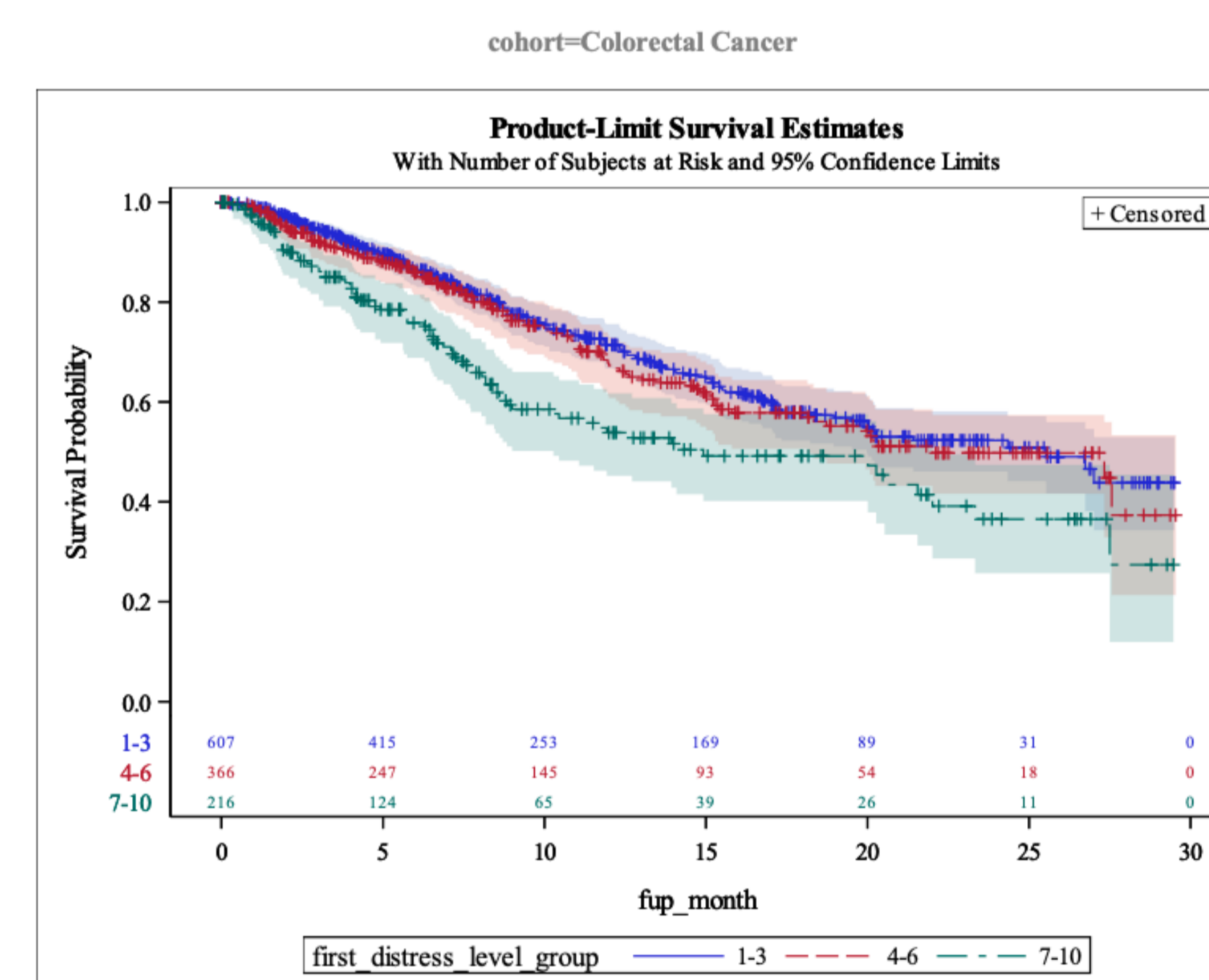
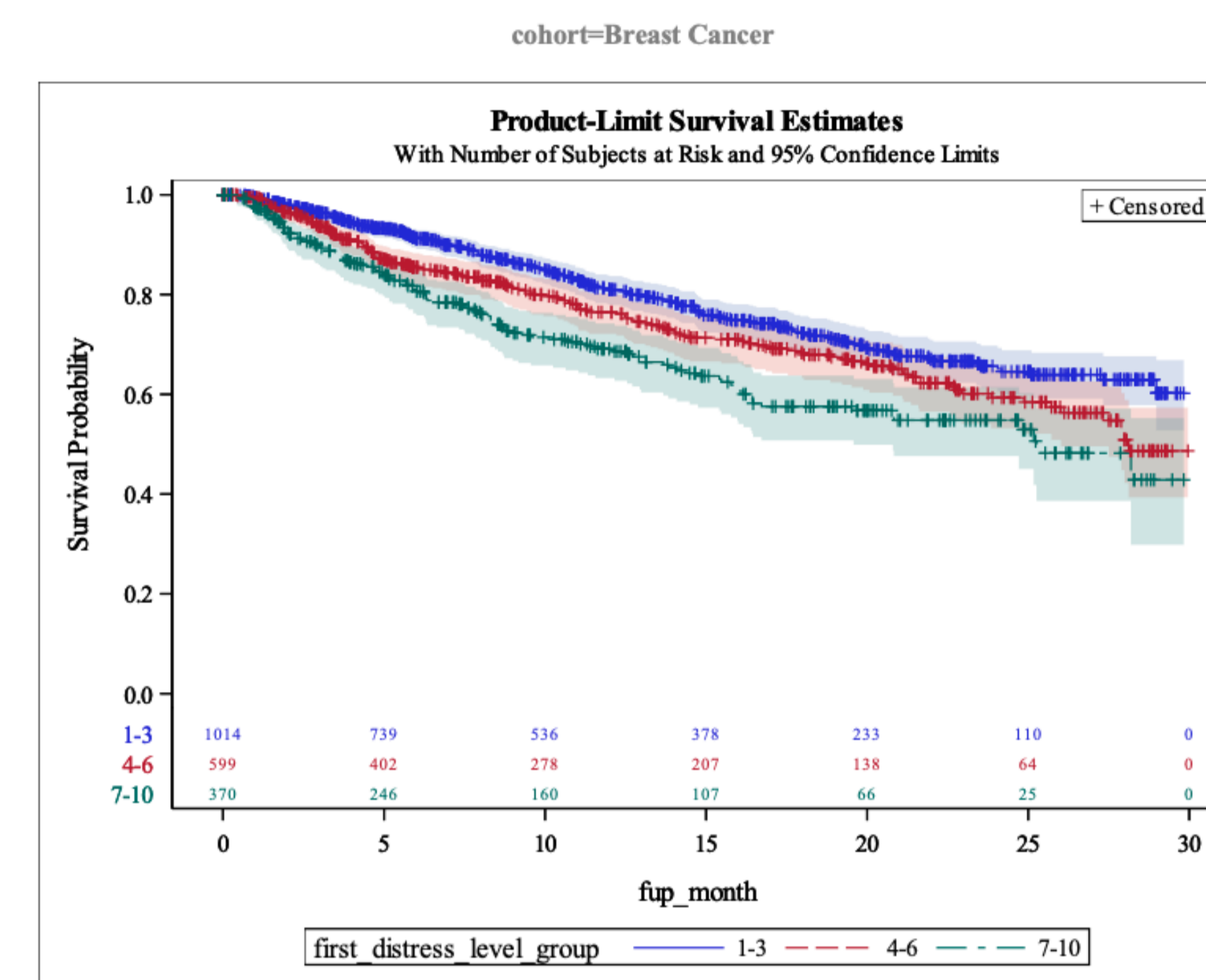
## Results

- Among 4,829 patients (41% mBC, 25% mCRC, 34% mNSCLC), median (IQR) age was 67 (58-76), with 70% female, 82% White.
- Median index DT was 4 (IQR 2-6); DT distribution according to categories were mild (50%), moderate (31%), and severe (19%), with emotional (56%) and physical (71%) domains being the most common concerns.
- Poor performance status (Eastern Cooperative Oncology Group score  $\geq 2$ ) was observed among 29% of patients with severe distress versus 20% overall ( $P < 0.0001$ ).

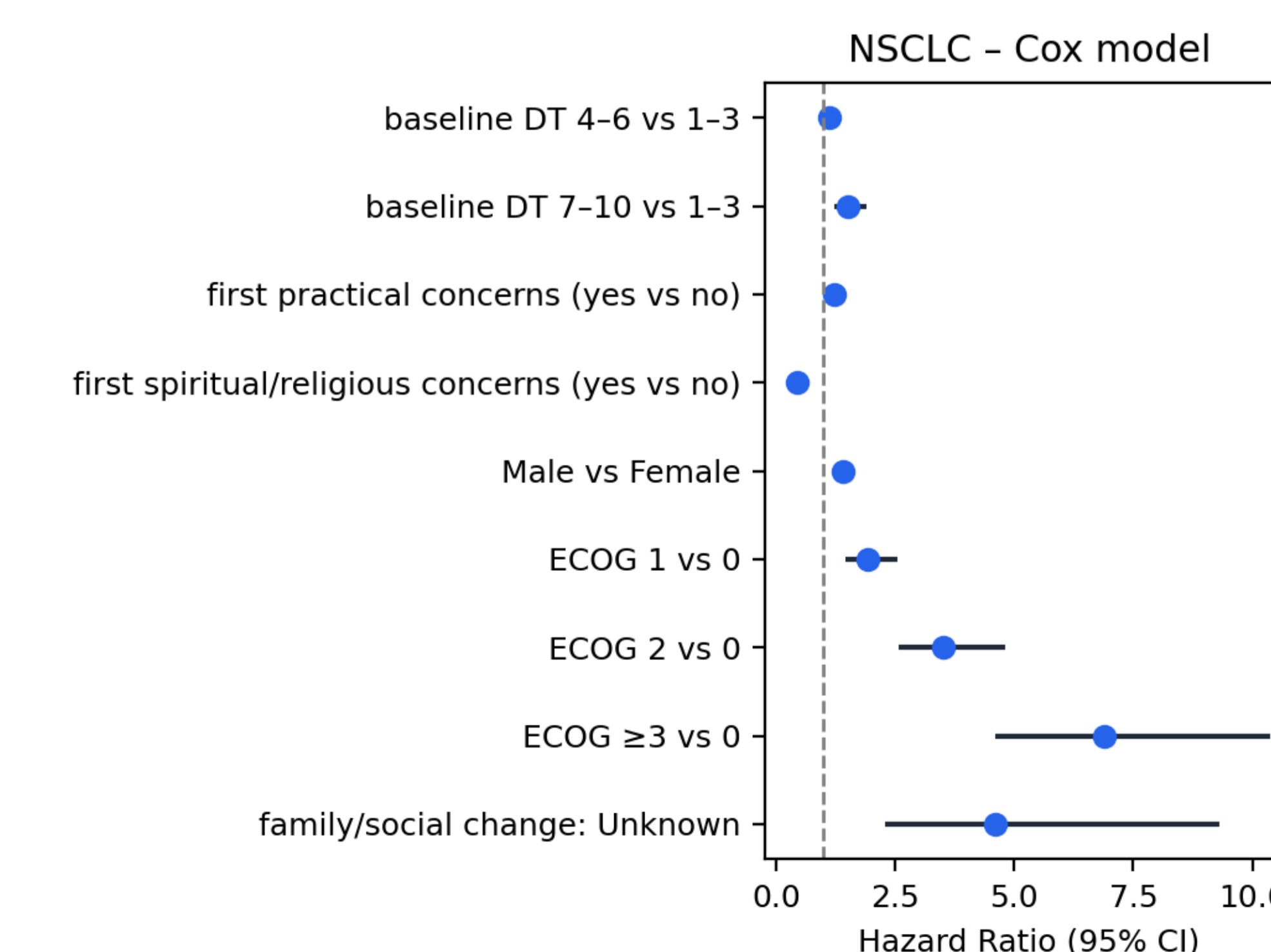
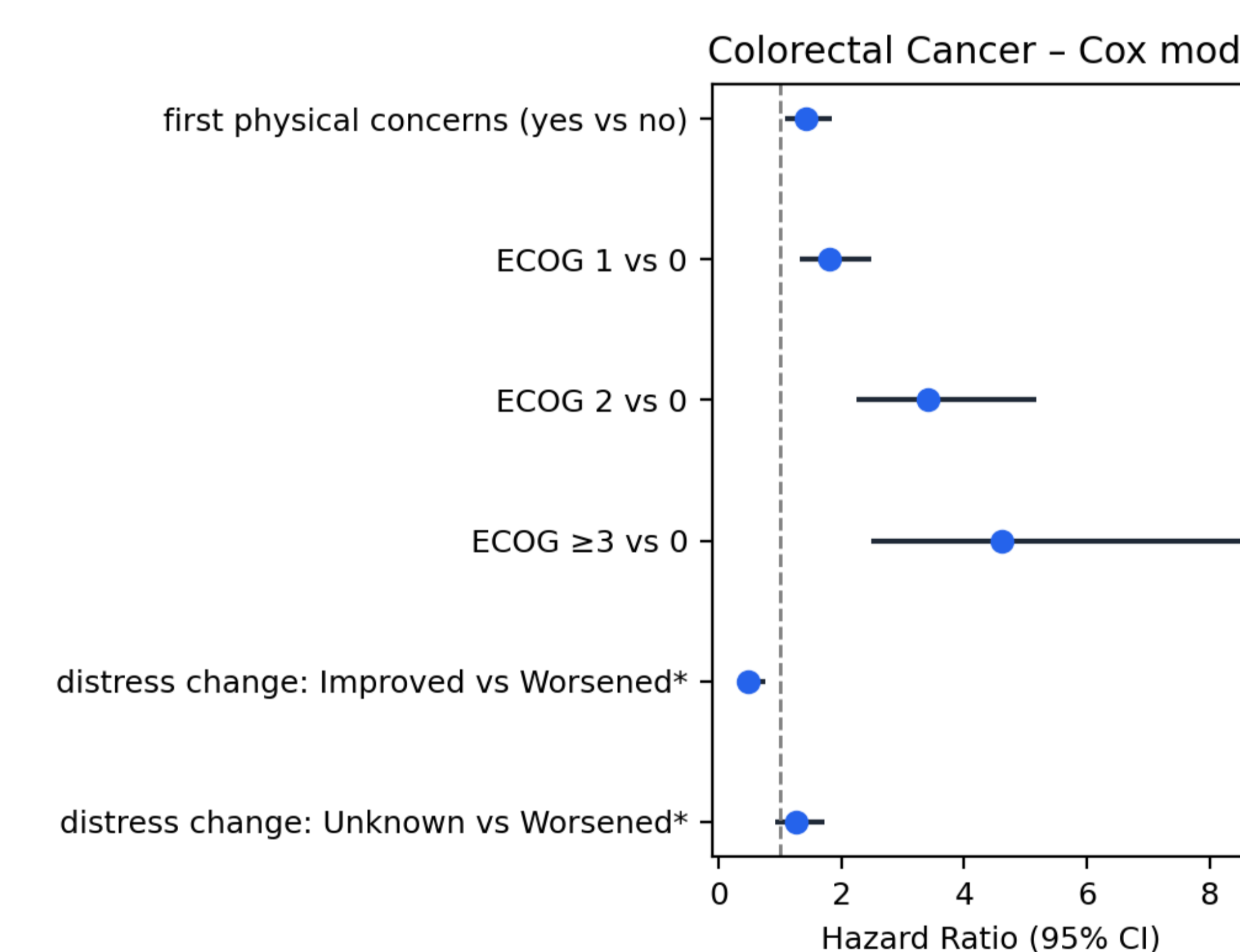
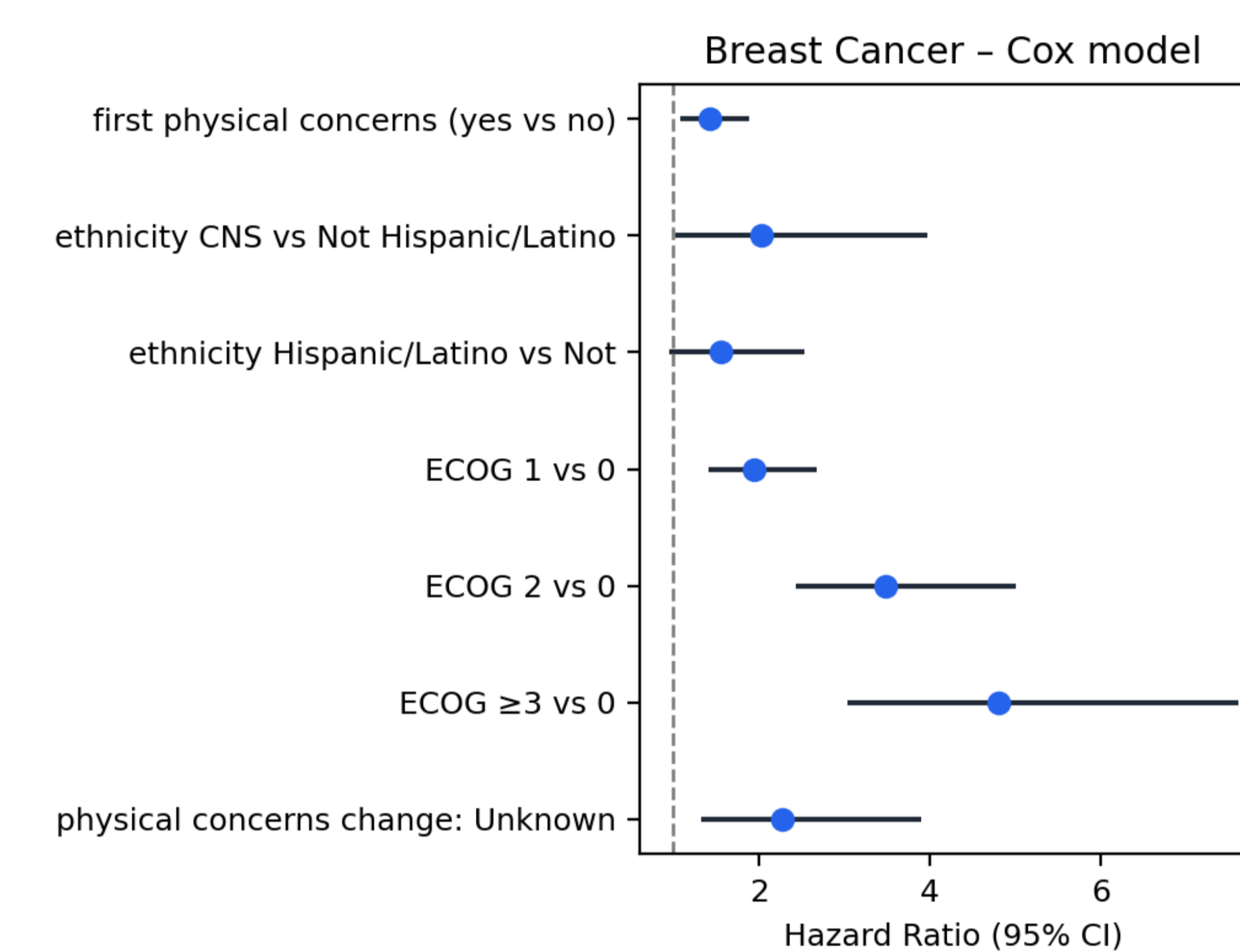
## Results (continued)

- DT thresholds  $\geq 4$  and  $\geq 7$  provided meaningful risk stratification for OS consistently across cancer types (Log-Rank test  $P < 0.0001$ ,  $0.0003$ ,  $< 0.0001$  for mBC, mCRC, and mNSCLC, respectively).
- After adjusting for covariates, severe distress was associated with significantly shorter OS in mNSCLC (hazard ratio [HR] 1.52 [95% confidence interval (CI): 1.22-1.89]), and with physical concerns in mBC (HR 1.43 [95% CI: 1.09-1.89]) and mCRC (HR 1.42 [95% CI: 1.09-1.85]).
- Improvement in DT scores over time was linked to better OS in mCRC (HR 0.49 [95% CI: 0.31-0.76])

**Figure 1. Overall Survival by DT level (crude)**



**Figure 2. Adjusted analysis of DT and OS**



## Discussion

While severe distress was independently associated with shorter survival in NSCLC, physical concerns emerged as the dominant prognostic domain in metastatic breast and colorectal cancer. These findings suggest that **both distress severity and the underlying problem domains matter**, and that the pathways linking psychosocial burden to outcomes may differ by cancer type.

Improvement in DT scores over time was associated with better OS in metastatic colorectal cancer, independent of baseline characteristics. This finding supports distress as a **dynamic, longitudinal marker** rather than a static baseline characteristic, reinforcing the value of repeated DT assessments to inform ongoing supportive care and risk monitoring

Baseline distress levels measured by the NCCN Distress Thermometer demonstrated **robust and consistent prognostic stratification across metastatic breast, colorectal, and NSCLC populations** in a large community oncology setting. DT thresholds commonly used in clinical practice ( $\geq 4$  and  $\geq 7$ ) identified patients at higher risk of mortality independent of demographic and clinical factors, supporting the DT as a **pragmatic, tumor-agnostic risk stratification tool** in routine oncology care.

## Conclusions

DT scores and problem-list domains capture patient-reported burden and predict overall survival across metastatic breast, colorectal, and lung cancer in routine clinical practice. These findings support routine DT screening as a pragmatic tool for risk stratification and longitudinal monitoring to inform supportive care in community oncology settings.